

REMARKS

I. STATUS OF CLAIMS AND SUPPORT FOR AMENDMENTS

Upon entry of this amendment, claims 1-3, 7-11, 13, 14, 16, and 18-24 will be pending in this application. Claims 4-6, 12, 15, and 17 have been canceled. Claims 19-20 have been withdrawn by the Examiner as being directed to a non-elected invention.

Applicants have amended the specification to introduce headings typically used in U.S. practice.

The amendments to paragraph [0002] have been made to correct a typographical error, and to more clearly describe the disclosure of U.S. Published Application No. 2002/0045490. Support for the amendments can be found in paragraphs [0055] to [0059] of that published application.

The paragraph inserted between paragraphs [0015] and [0016] is supported by original claim 3, and provides express support for this claim.

The amendment to paragraph [0016] corrects an obvious typographical error. Applicants submit that one of ordinary skill in this art would recognize the existence of the error, as well as the appropriate correction, made herein. *See In re Odd*, 443 F.2d 1200, 170 USPQ 268 (CCPA 1971).

The amendment to paragraph [0020] is to correct a typographical error. Support for the amendment can be found in original claim 19.

The amendments to paragraph [0025] are supported by original claim 20.

The amendments to paragraph [0027] are supported by original claim 12.

The amendments to paragraph [0029] correct an obvious typographical error, are supported by original claims 17 and 18, or clarify that it is the size of the grains of the martensitic structure to which the disclosed size refers.

Applicants have amended claim 1 to clarify that the golf club head comprises one or more parts which contain the recited maraging steel. This is supported by the "at least partly" language of the claim as originally filed, as well as paragraph [0030] of the specification. Applicants have also amended claim 1 to use a more conventional "consisting essentially of" transitional phrase. Support for the optional presence of combinations of nickel and cobalt can be found in the specification at paragraph [0012]. Support for the optional presence of combinations of chromium and molybdenum, chromium and tungsten, or chromium, molybdenum and tungsten can be found in original claim 2 and in paragraph [0011] of the specification. Support for the optional presence of cerium or cerium misch metal can be found in original claim 4 and the specification at paragraph [0015]. Support for the optional presence of manganese, niobium, or silicon can be found in original claim 5 and in the specification at paragraph [0013]. Support for the optional presence of C, N, S, P, B, H, or O can be found in original claim 6 and in the specification at paragraph [0014]. Support for the optional presence of copper can be found in the specification at paragraph [0012]. Support for a Vickers Hardness HV > 700 can be found in original claim 15 and in the specification at paragraph [0026].

Claims 2, 3, 7-14, and 16-20 have been amended to increase their clarity, to correct dependencies, and to more closely comply with U.S. practice.

New claims 21-23 are supported by original claims 9, 12, and 17, respectively. New claim 24 is supported by the specification at paragraph [0029].

No new matter has been added.

II. REQUIREMENT FOR RESTRICTION

In paragraph 1 of the Office action, the Examiner has required restriction between Group 1, claims 1-18, and Group II, claims 19-20. Applicants affirm the election of Group I made in the telephonic interview of August 21, 2007 and referred to at page 2 of the Office action. However, this election is made with traverse. Applicants submit that the Examiner's restriction requirement is in error for at least the following reasons.

The Examiner characterizes the "common technical feature" in both Group I and Group II as "maraging steel." Because the Examiner considers that "maraging steel" is known in the art, and concludes, without citation to any legal precedent supporting his view, that a feature that the Examiner considers to be known in the art "cannot be a special technical feature under PCT Rules [sic] 13.2" The Examiner then reasons that "Inventions I-II lack the same or corresponding special technical features. Therefore unity of invention is lacking and restriction is appropriate."

The Examiner's approach is the result of an overly narrow view of the "special technical feature" in common between Group I and Group II. The maraging steel used in the golf club head of Group I, the production of which results from the specially adapted process of Group II is not the maraging steel described in the prior art to which the Examiner refers, as explained in more detail below. To the contrary, the maraging steel of the golf club heads of Group I possesses particular properties, such as tensile strength, yield strength, and hardness, that are not disclosed for the maraging steel of WO 01/53556 ("the '556 publication"), and cannot simply be

presumed based on similarities in composition. These properties result from the differences in structure that occur as the result of particular processing used to form the maraging steel. This processing involves process steps that are not disclosed in the '556 publication. It is the maraging steel having these properties that is the "special technical feature" in common between the process and product claims.

With this factual background, Applicants direct the Examiner's attention to MPEP § 1850(II), which states:

Although lack of unity of invention should certainly be raised in clear cases, it should neither be raised nor maintained on the basis of a narrow, literal or academic approach. . . . [T]he benefit of any doubt should be given to the applicant.

From the preceding paragraphs it is clear that the decision with respect to unity of invention rests with the International Searching Authority or the International Preliminary Examining Authority.

Applicants respectfully submit that the Examiner is neither the ISA nor the IPEA, and that there is no reason for the Examiner to now assert that unity of invention is lacking in the present application when a common "special technical feature" exists as indicated above. Under these circumstances, the Examiner's requirement for restriction is improper, contrary to the obligations of the U.S. PTO under the PCT, and should be withdrawn.

III. OBVIOUSNESS REJECTION

In paragraph 2 of the Office action, the Examiner has rejected claims 1-18 under 35 U.S.C. § 103(a) as obvious over U.S. Patent Application Publication No. 2003/0091458 (Weber et al., the English language counterpart of the '556 publication) in view of U.S. Patent Application Publication No. 2002/0045490 (Ezawa et al.). Applicants respectfully traverse this rejection and request its reconsideration and withdrawal.

The Examiner states that:

Weber et al. discloses a maraging steel with a martensite temperature $M_s \geq 130^\circ\text{C}$, a ferrite content $C_{\text{ferrite}} < 3\%$, wherein the maraging steel essentially consists of by weight 6.0-9.0% of nickel, 11.0-15.0% of chromium, 0.1-0.3% of beryllium and the rest being iron together with unavoidable impurities (abstract). Weber et al. (458 A1) further disclose a process to produce the maraging steel (paragraph [0029], page 2), which is substantially identical to the process of the instant invention. Weber et al. (458 A1) do not specify the mechanical properties as claimed in the instant claims 1 and 9-18. However, it has been well held where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977), MPEP 2112.01 [R3] I. In the instant case, the claimed and Weber et al. (458 A1)'s maraging steel are identical or substantially identical in composition and structure and are produced by identical or substantially identical processes, therefore the maraging steel of Weber et al. (458 A1) anticipates the claimed maraging steel. The same tensile strength, the same yield strength, the same alternating flexure strength, the same hardness and the same maximal storage energy would be expected in the maraging steel of Weber et al. (458 A1) as in the claimed maraging steel.

Office action dated October 24, 2007, pages 4-5.

The Examiner admits that Weber et al. does not disclose a golf club head containing the maraging steel disclosed therein. In an attempt to cure this deficiency, the Examiner turns to Ezawa et al., and asserts that:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the maraging steel of Ezawa et al. ('490 A1) with the maraging steel of Weber et al. (458 A1) with expected success, because the maraging steels are functionally equivalent in terms of being used to make golf club heads as disclosed by Ezawa et al. ('490 A1) (paragraph [0010], page 1). See MPEP 2144.06.

Office action dated October 24, 2007, page 5. Applicants respectfully submit that there are numerous factual and legal errors in the Examiner's rationale, and that the

result of these errors is that the Examiner's rejection is unsupportable, erroneous, and should be withdrawn.

First, the legal framework used by the Examiner in his analysis is incorrect. While it may be the case that materials having the same structure can be presumed to have the same properties, this is not the same as presuming that materials having the same composition have the same properties. In the *Best* decision, cited by the Examiner, both the prior art composition and the claimed composition had the same composition and the same zeolite structure, and the appellant had failed to establish any difference in properties, so their properties of the materials were presumed to be the same. This is not true in the present situation. Here, the Examiner appears to have presumed that the properties of the claimed maraging steel must be the same as those of the maraging steel disclosed in Weber et al. because the same ranges of elements may be present in each composition.

This reasoning ignores the possibility of different properties resulting from different processing parameters, a possibility that occurs with some frequency in the metallurgical arts. As explained below in more detail, the process used to produce the maraging steel recited in Applicants' claims is not identical to that disclosed in Weber et al., as the Examiner has alleged, so the Examiner's conclusion that the compositional similarity between the two steels must result in an identity of properties is unsupported by the facts. The *Best* decision and MPEP § 2112.01, cited by the Examiner, do not support the proposition that two compositions, which merely have the same elements present in the same amounts, but which have not been shown to have the same structure, can be presumed to have similar properties. Both *Best* and the MPEP are careful to point out that it is the physical structure of the

elements in the compositions that must be the same before an identity of properties can be presumed.

Second, the Examiner's factual premises are incorrect. Contrary to the Examiner's assumptions, it is not the case that the process disclosed in Weber et al. is substantially identical to that disclosed in Applicants' specification. Weber et al. disclose multiple processes for producing a maraging spring steel, some of which use cold forming, and some of which do not. Weber et al. do not disclose or suggest any connection between the use of a process that includes cold forming, and in particular, the use of a process that includes cold forming to at least 60%, and the attainment of increased tensile strength, yield strength, and hardness. As Applicants explain in the specification, spring steels of the type disclosed in Weber et al. are processed in the solution-annealed state and/or are weakly cold-formed and age-hardened. Applicants' disclosed process uses a more extensive cold-forming procedure, to at least 60%. No significance is ascribed by the Weber et al. disclosure to the use of such a high degree of cold-forming. The Weber et al. disclosure also does not teach or suggest a process that includes a second heat treatment at $300\text{ }^{\circ}\text{C} \leq T5 \leq 470\text{ }^{\circ}\text{C}$, as disclosed in Applicants' specification at paragraph [0025].

Third, because the Examiner's factual premises are incorrect, his factual conclusion that the maraging steel disclosed in Weber et al. and that of Applicants' claims must be identical, and therefore have the same properties, is also incorrect. Moreover, the disclosure of Weber et al. clearly shows that the Examiner's conclusions are incorrect. For example, paragraph [0032] of Weber et al. indicates significantly lower values for tensile strength and hardness than are recited in

Applicants' claims. If the Examiner were correct, and an maraging steel identical to that of the claims had been obtained, then these values should be much higher (indeed, they should be identical to those recited in Applicants' claims). They are not, because different steels are obtained. As another and even clearer example, Figure 4 of Weber et al. shows a Vickers Hardness that never reaches 700, no matter how much cold forming is applied. Applicants' claim 1 recites a minimum Vickers Hardness of 700, well above the level that Weber et al. ever attained. Again, Weber et al. explicitly shows that the steel disclosed therein does not have the properties of the steel recited in Applicants' claims. Using the Examiner's own logic, if the properties are different, then the structure of the composition must also be different. For this reason as well, the Examiner's factual conclusions are incorrect. Similar reasoning leads to the conclusion that claims 21-23 are directed to compositions that are not disclosed in Weber et al. because the properties recited in the claims are significantly different from those disclosed in Weber et al., or are not disclosed at all.

For these reasons alone, the Examiner's obviousness rejection should be withdrawn. Even if the Examiner were correct that one of ordinary skill in the art would have been motivated to replace the steel disclosed in Ezawa et al. with that of Weber et al., the result would not be the claimed invention because the steel of Weber et al. is not the steel recited in Applicants' claims, for the reasons given above. As a result, the Examiner has failed to establish a *prima facie* case of obviousness.

However, the Examiner's legal conclusion of obviousness is incorrect for another reason as well: a worker of ordinary skill in this art would not have been

motivated to replace the steel of Ezawa et al. with that of Weber et al. The reason for this is that the maraging steels used in each are fundamentally different. Ezama et al. disclose the use of a maraging steel that must contain boron, and that does not contain beryllium. This steel is used to fashion a golf club head, where the properties of tensile strength, yield strength, hardness, and the like are of great significance, while isotropic deformability is of much decreased significance. By contrast, Weber et al. disclose a maraging spring steel that requires the presence of beryllium, takes pains to manufacture the steel so that there are no edge regions that are depleted in beryllium, and only optionally allows small amounts of boron to be present. Weber et al. is concerned with the use of this material as a spring steel, where isotropic deformability is of great significance, while properties such as tensile strength, yield strength, and hardness are of less significance.

Given the fundamentally different design requirements for these two uses, and the resulting compositional and structural differences between the alloys that meet these design requirements (despite both being broadly describable as "maraging steels"), one of ordinary skill in this art would not have reasonably expected that the spring steel of Weber et al. would function effectively in an application requiring high tensile and yield strengths, and high hardness, and where isotropic deformability, the property for which the spring steel was primarily engineered, to be relatively unimportant. As a result, this worker would not have combined the reference teachings in the manner that the Examiner has suggested, and would not have used the spring steel disclosed by Weber et al. in the golf club application disclosed by Ezawa et al. For this reason as well, the Examiner has

failed to establish a *prima facie* case of obviousness, and this rejection should be withdrawn.

IV. OBVIOUSNESS-TYPE DOUBLE PATENTING REJECTION

In paragraph 3 of the Office action, the Examiner has provisionally rejected claims 1-18 on the ground of nonstatutory obviousness-type double patenting over claims 1-9 of Weber et al. in view of Ezawa et al. Applicants respectfully traverse this rejection and request its reconsideration and withdrawal.

While Applicants are not averse to filing a terminal disclaimer in an appropriate situation, this rejection does not present such a situation. As explained above, the Examiner has failed to establish a *prima facie* case of obviousness over the combined disclosures of Weber et al. and Ezawa et al. This failure is even more apparent when the claims of Weber et al. are considered, which recite a spring steel having isotropic deformability, making the difference in properties between the Weber et al. claims and those of this application even more apparent. Moreover, the recitation of a spring steel having isotropic deformability in the Weber et al. claims makes their combination with Ezawa et al. even more obviously improper, since one of ordinary skill in this art would not reasonably expect that such a spring steel would be suitable for use in a golf club head, as explained above. For at least these reasons, Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness, without which the double patenting rejection is improper, and should be withdrawn.

Applicants submit that the claims are in condition for immediate allowance, and an early notification thereof is earnestly solicited. If any issues remain to be

resolved, the Examiner is respectfully requested to contact the undersigned to schedule a telephonic or personal interview to discuss them prior to issuance of a final rejection.

Respectfully submitted,

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